

REMARKS

Applicants noted with appreciation the apparent allowance of the subject matter of claims 1 and 23. However, they believe the amendments to independent claims 1 and 14 now place all the claims in condition for allowance.

Independent Claims 1 and 14 have been amended so that the blades are defined not to move relative to each other. As shown in Figures 1 and 2 of the drawings, in one embodiment of the invention, the plurality of blades are attached to the frame. By moving the frame, the blades the intercept the energy beam, and the exposure device can achieve blockage of the energy beam in a very short time. Unlike the prior art as discussed herein, the blades remain fixed relative to each other even when the device is activated.

The Examiner maintained his rejections of all the claims except 10 and 23 as being anticipated by McCullough, U.S. Patent 6,097,474 as being obvious over McCullough alone or in view of Styrnol et al. U.S. Patent 6,252,935.

In his response to the previous Amendment, the Examiner conceded that the blades (48) of McCullough do move relative to each other, but asserted that the positions of the blades remain fixed relative to each other reasoning that each individual blade is fixed to push rod (34) by pivot pin (46). Applicants have now amended independent claims 1 and 14 so that the blades are defined not to move relative to each other. Given the Examiner's position that McCullough's blades do move relative to each other, the claim subject matter is clearly distinguishable over the prior art.

For the foregoing reasons Applicants submit that the pending claims define novel and non-obvious subject matter. In the event that there are any questions concerning this amendment or the application in general, the Examiner is respectfully urged to telephone the undersigned attorney so that prosecution may be expedited.

Respectfully submitted,

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Marked-Up Version of Claims As Amended Herein

1. (Twice Amended) An exposure device comprising:
a source of radiation that generates an energy beam;
a shutter that includes (i) a frame defining an aperture toward which the energy beam is directed and (ii) a plurality of blades that are secured to the frame wherein each blade does not move relative to the other blades; and
means for rotating the frame of the shutter to cause the plurality of blades to intercept or allow the energy beam to travel through the aperture wherein the positions of the individual blades remain fixed relative to each other.

14. (Twice Amended) A method of patterning a substrate through controlled exposure of the substrate in a vacuum system which comprises the steps of:
generating radiation comprising an energy beam;
controlling the exposure with an exposure device that comprises a shutter that includes (i) a frame defining an aperture toward which the energy beam is directed and (ii) a plurality of blades that are secured to the frame wherein each blade does not move relative to the other blades; and
rotating the frame of the shutter to cause the plurality of blades to intercept or allow the energy beam to travel through the aperture wherein the positions of the individual blades remain fixed relative to each other.